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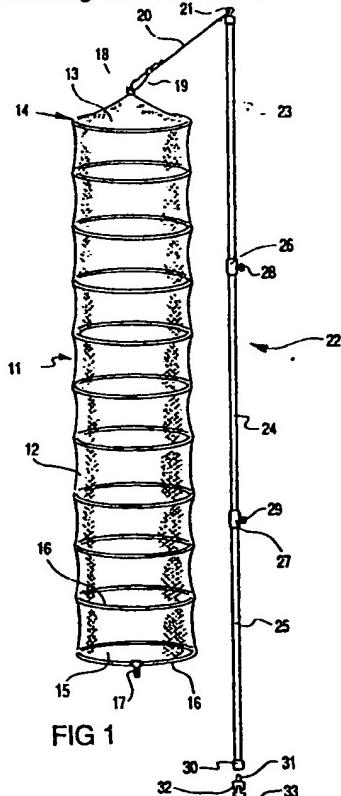
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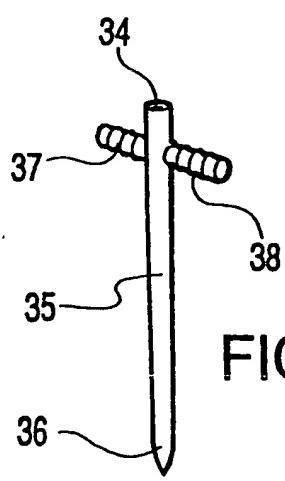
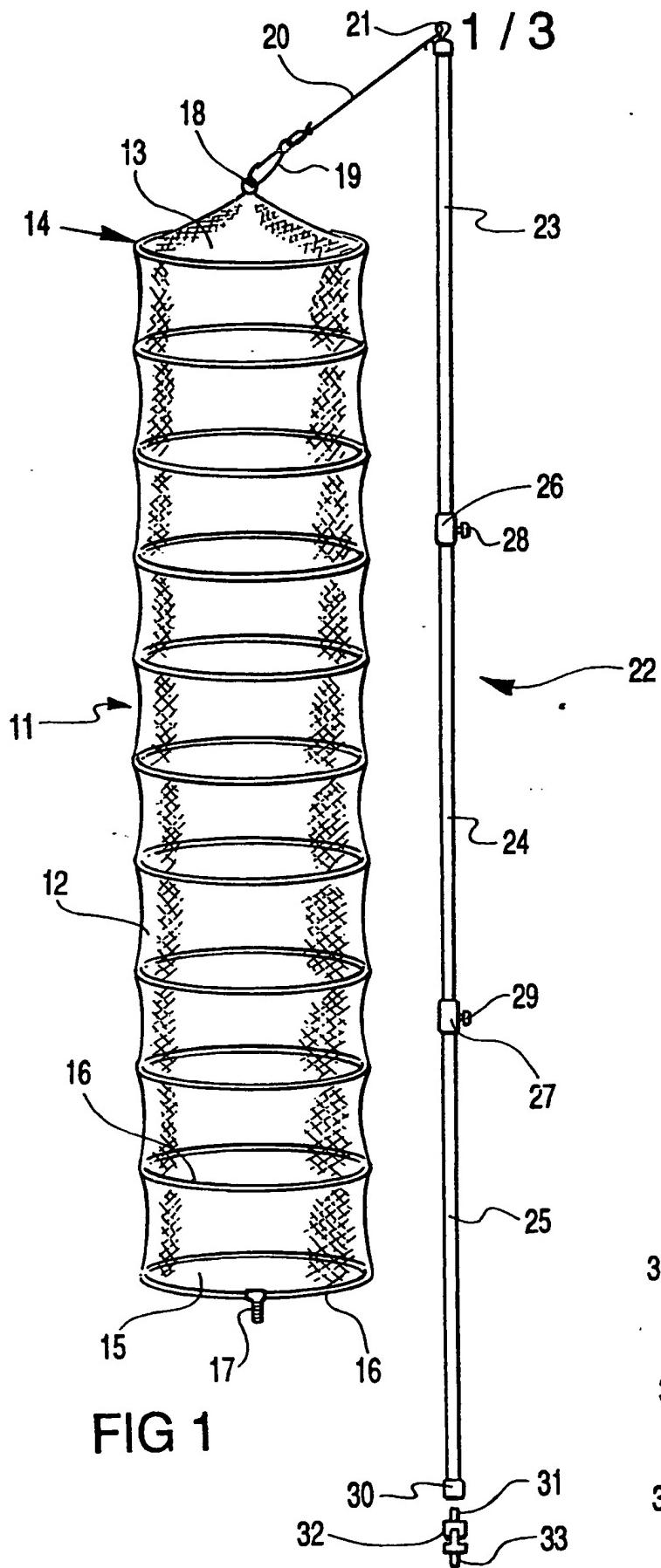
## (54) Apparatus for handling a keep net

(57) Apparatus for handling a keep net of the type comprising a generally tubular net body (12) closed at one end (13) and open at the end (15) and supported in shape by a plurality of spaced hoops (16), comprise an elongate rigid support member (22), a flexible line (20) releasably connecting one end of the support member (22) to the closed end of the net body (12), and a ground-penetrating stake for connecting the other end of the support member (22) to the open end of the net body and for fixing that end of the support body and the net body to the ground. A method of using the apparatus for inserting the keep net in a water body and for fixing it to the bank is also included.

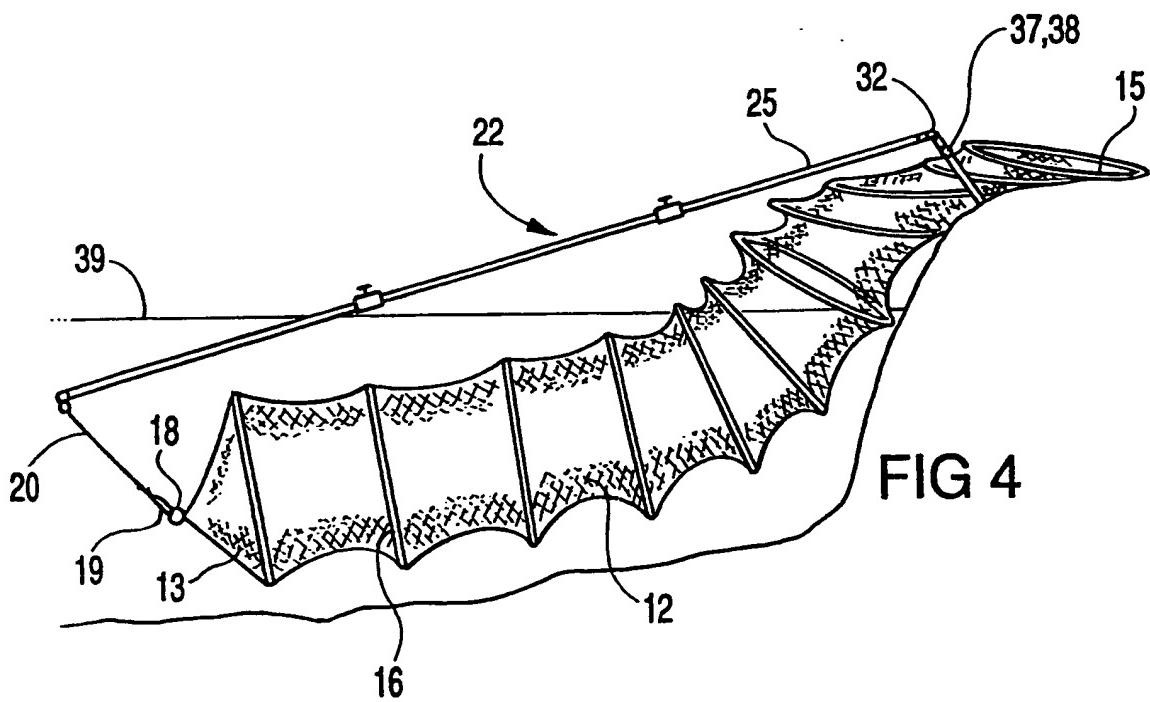
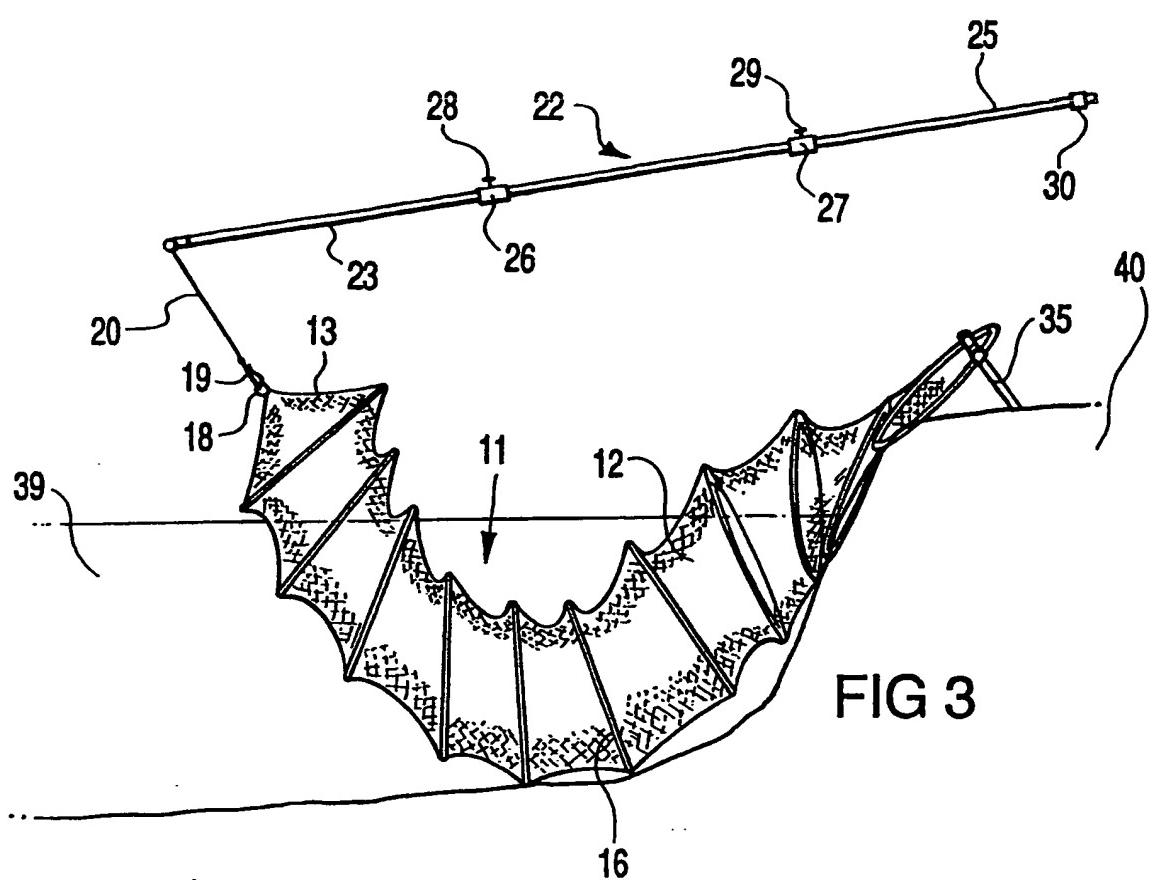


At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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FIG 5

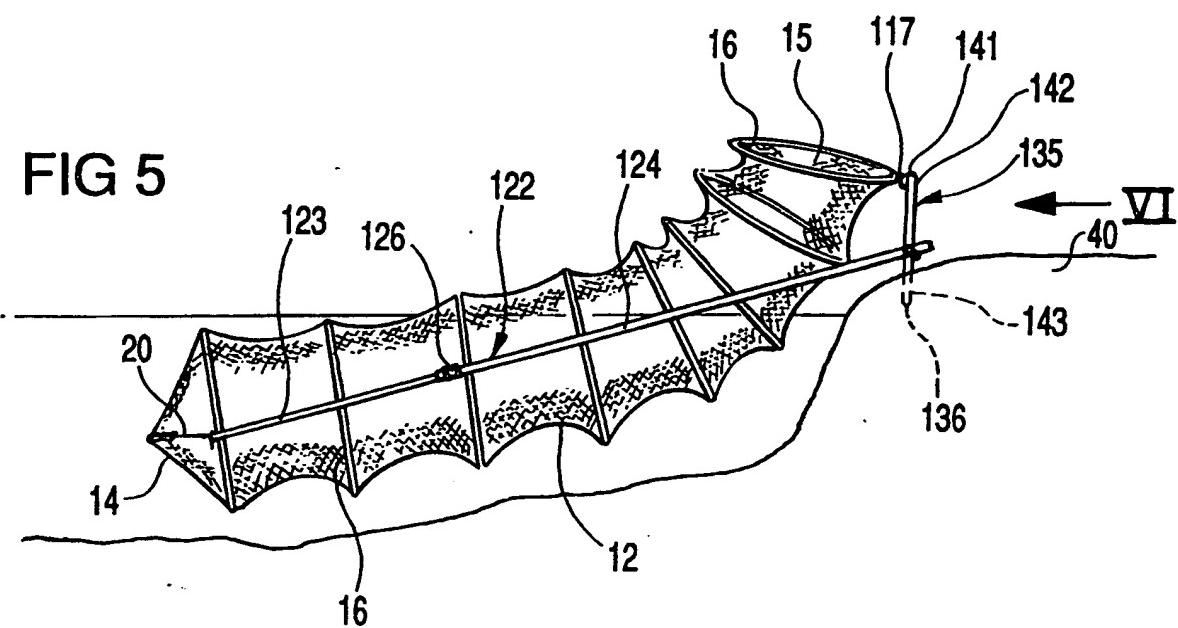
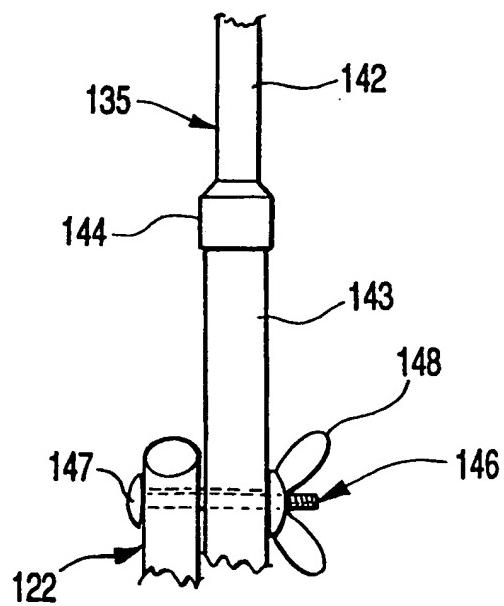


FIG 6



APPARATUS FOR HANDLING A KEEP NET

The present invention relates generally to angling, and particularly to apparatus for handling a keep net.

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- In the sport of angling it is usually desirable to maintain the fish caught alive, and for this purpose use is generally made of a so-called keep net which is usable to retain the fish in a defined area for subsequent collection and/or return to the body of water from which they were first caught. As used in this specification the term "keep net" will be understood generally to relate to a net of elongate generally tubular form which is closed at one end and which has a plurality of hoops or spacers which retain the net in its tubular, generally cylindrical shape. Such nets are open at the other end and usually have some means by which the terminal hoop can be secured to the ground so that a fish, once caught by the angler, can be slipped into the net within which it is maintained alive in the water, but from which it cannot escape. In use such keep nets extend into the water from the bank and are usually of a length such as to project through any weed growing at the bank.
- 25 Many different river bank or lake side environments are experienced by anglers, from shallow, stony or sandy banks to steep weed-choked banks. Difficulties are encountered

in some circumstances when it is desired to introduce a relatively elongate keep net into the body of water, whether it be a river, a lake, canal or pond, since the depth of the water sometimes precludes the angler from 5 wading out sufficiently far to draw the closed end of the net satisfactorily into the water and accidents have occurred when anglers, particularly younger children, have sought to introduce a keep net into a body of water, having a greater depth than they can safely cope with 10 and/or weed or mud bottoms which may tend to make movement difficult. This is exacerbated at banks which have a shallow sloping surface since these necessitate a further introduction of the closed end of the net in order to ensure that an adequate submersion of this end of the net 15 is achieved.

The technical problem on which the present invention is based, therefore, is that of providing a secure means for handling a keep net, and particularly for introducing a 20 keep net into a body of water, through weed or other obstacles, which will enable the net to be introduced safely into the water in any conditions without the angler having to enter the water or become dangerously overbalanced.

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The present invention provides, according to one aspect, apparatus for handling a keep net of the type comprising a

generally tubular net body, closed at one end and open at the other and supported in shape by a plurality of spaced hoops, comprising an elongate rigid support member,  
5 attachment means at one end of the said support member for attachment thereof to the said one end of the tubular net body, and fixing means at the other end of the said support member for fixing it in position on the ground. The said fixing means preferably serve to connect the support member to the hoop at the open end of the net and  
10 to fix this to the ground as well as fixing the end of the support member to the ground.

The said elongate rigid support member may be one of any of a number of different forms. Ideally, the elongate  
15 rigid support member should be telescopically collapsible to facilitate storage and transport thereof. Such an embodiment of course requires means by which the telescopic components may be secured against relative axial displacement when in the extended position, such as  
20 screw clamps, lock nuts or the like. Alternatively, and equally satisfactory, the said elongate rigid support member may be composed of a plurality of separable elements to permit collapsing of the support member for transport and storage thereof. In another alternative  
25 embodiment the said elongate rigid member may be composed of a plurality of hingedly interconnected elementary limbs which are displaceable between an erected and collapsed or

folded position, means being provided to hold the adjacent elementary limbs in substantially aligned orientation when the elongate rigid member is erected. Such means, may, for example, be in the form of relatively closely fitting 5 slidable collars which can be displaced longitudinally to expose the hinge to allow folding, and can be moved along the limb to enclose the hinge line to hold the two adjacent members rigidly in alignment.

10 The said fixing means at the other end of the said support member for fixing it in position on the ground preferably comprises a ground-penetrating stake or spike removably attachable to the said other end of the elongate rigid member.

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The said attachment means at the said one end of the elongate rigid member preferably includes a flexible line having a length at least as great as the radius of the support hoops of the tubular net body. Such attachments 20 means at the said one end of the elongate rigid member may also include a releasable hook at the free end of the said flexible line.

In a preferred embodiment of the invention the said 25 ground-penetrating stake or spike is connected to the elongate rigid member or to an adjacent component thereof by means such as a knuckle joint, whereby to permit the

elongate rigid member to lie at an angle generally parallel to the ground surface when attached to the ground-penetrating stake or spike inserted generally orthogonally of the ground surface.

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The joint interconnecting the said ground-penetrating stake or spike and the elongate rigid member or the next adjacent component thereof may be a universal joint permitting angular movement in two planes.

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In such an embodiment as described above the stake or spike may be attachable at or adjacent its end opposite its ground-penetrating end both to that hoop of the keep net at the open end thereof and to the rigid elongate member. In an alternative embodiment, the stake or spike is attachable at its end opposite its ground-penetrating end to that hoop of the keep net at the open end thereof and is attachable to the elongate rigid member at a point intermediate its ends but closer to the ground-penetrating end.

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In use of the keep net handling apparatus of the present invention, therefore, the elongate rigid support member is erected and the said attachment means secured to the closed end of the keep net. The invention therefore comprehends a method of laying a keep net of the type comprising a generally tubular net body closed at one end

- and open at the other and supported in shape by a plurality of spaced hoops, comprising the steps of attaching to the said one end of the tubular net body a keep net handling apparatus as described above, advancing 5 the said one end of the net beyond the bank into a body of water whilst retaining the said other end secured to the bank, and fixing the said other end of the elongate rigid member to the bank by the said fixing means.
- 10 Depending on the nature of the bank, it may be appropriate to advance the closed end of the keep net out over the water above the surface until fully extended, and then to lower this into the water, or alternatively it may be appropriate to introduce the closed end of the net into 15 the water close to the bank and to push this forwardly, through any weed which may be present, whilst retaining the keep net closely adjacent the river bed or lake bed.
- If, as outlined above, the said fixing means include a 20 ground penetrating stake or spike the step of fixing the said other end of the elongate rigid member to the ground then preferably comprises introducing the said stake or spike into the ground and connecting the elongate rigid member or the next adjacent component thereof to the said 25 ground penetrating spike. The interconnections may be of any suitable form, but conveniently use may be made of simple pin and socket joints which have a degree of

interference fit or are snap engageable so that connection can be made quickly and easily by applying a suitable force parallel to the length of the pin.

- 5 The present invention also comprehends a keep net of the type comprising a generally tubular net body closed at one end and open at the other, and supported in shape by a plurality of spaced hoops, having apparatus for handling the net comprising an elongate rigid support member,  
10 attachment means at one end of the support member for attachment thereof to the said one end of the tubular net body, and fixing means at the other end of the said support member for fixing it in position on the ground.

- 15 Two embodiments of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:

- Figure 1 is a schematic perspective view of a keep net fitted with a first embodiment of keep net handling apparatus formed according to the principles of the present invention;

Figure 2 is a perspective view of a suitable ground engaging spike forming part of the embodiment of Figure 1;

- Figure 3 is a schematic side view illustrating the method of introducing the keep net into a body of water using the apparatus for the present invention;

Figure 4 illustrates the keep net in position;

Figure 5 is a view similar to Figure 4 illustrated a keep net held in position by apparatus according to a second embodiment of the invention; and

Figure 6 shows a detail of the embodiment of Figure 5 5 taken on arrow VI.

Referring now to the drawings, Figure 1 illustrates a keep net of known type generally indicated with the reference numeral 11 and comprising a tubular net body 12 having an 10 end wall net panel 13 closing a first end 14 of the net body 12, and an open end 15 at the end opposite the closed end 14. The tubular body 12 is retained in shape by a series of circular hoops 16 spaced at regular intervals along the length of the body 12. The terminal hoop 16 at 15 the open end 15 of the net body 12 is provided with a handle 17 by which it can be manipulated, and by which it may be connected to the ground-engaging spike to retain the open end in position on the bank as will be described in more detail hereinbelow.

20

Attached to the closed end 13 of the net body 12 is an attachment loop 18 shown in Figure 1 engaged to a releasable hook 19 which is secured at the free end of a flexible line 20 the other end of which is secured to a 25 loop 21 at one end of an elongate rigid member generally indicated 22 and composed of a plurality, in this case 3, of individual elementary limbs 23, 24, 25. In this

embodiment the elementary limbs 23, 24, 25 are separable and interconnectable by means of collars 26, 27 having respective screw clamps 28, 29 by means of which the engagement of the limbs 23, 24 and 24, 25 respectively may 5 be released to allow separation of the limbs for packing and transport. At its free end the limb 25 has a socket sleeve 30 for receiving a pin 31 of a knuckle joint 32 turnable in a given plane between the aligned position illustrated in Figure 1 and a folded position which will 10 be described in more detail below. The knuckle joint 32 has a second pin 33 for connection into an open socket 34 of a ground engaging spike 35 illustrated in Figure 2. The spike 35 has a pointed end or tip 36 at the end thereof remote from the open socket 34 and is provided 15 with two transverse hand grips 37, 38 to facilitate introducing the spike into the ground and removing it therefrom.

Figure 3 illustrates the keep net 11 in the course of 20 being introduced into a body of water generally indicated 39 at a river bank or lake side generally indicated 40. In this case the bank 40 is illustrated as being relatively steep but free of weeds. In this embodiment, then, the ground engaging spike 35 is introduced into the 25 bank 40 to retain the open end 15 of the net 12 the remainder of which is extended out over the water 39 by means of the elongate rigid member 22 which supports the

closed end 14 of the net 12 by interconnection of the line 20 via the hook 19 and loop 18 to the end panel 13 of the net 12.

5 In this way the net can be lowered into the water fully extended without it being necessary for this to be cast vigorously into the water which may cause disturbances such as to alert to fish as to the presence of the angler and without the need for the angler to wade into the water  
10 to draw the net out to its full extent. When the net 12 has been lowered into the water the other end of the elongate rigid member 22 can be secured to the ground engaging spike 35 by introducing the pin 33 of the knuckle joint 32 into the socket 34 and pushing this firmly home  
15 into position.

The keep net can then be used in the normal way by introducing fish through the open end 15 to be retained alive within the water but restrained from escaping by the  
20 portion of the net which is underwater.

Removal of the net from the water can be achieved simply by withdrawing the ground engaging spike 35 and the handle 17 securing the hoop 16 at the open end 15 to the ground  
25 and drawing the net as a whole, together with the elongate rigid member 22 out of the water onto the bank 40.

With reference now to Figure 5 of the drawings, items identical to those illustrated in Figures 1 to 4 are indicated by the same reference numerals while elements similar to those illustrated in Figures 1 to 4 are 5 indicated by the same references increased by 100.

In the embodiment of Figure 5, the keep net 12 is supported by an elongate rigid member 122 and a ground-engaging spike 135. The member 122 is formed in two parts 10 123 and 124 which are telescopically slidable and can be fixed at a selected length by a turn screw 126.

The end of the rigid member 122 remote from the spike 135 supports the closed end 14 of the net 12 by means of a 15 line 20, a hook 19 and a loop 18 as in the embodiment of Figures 1 to 4. The main difference between this embodiment and that of Figures 1 to 4 lies in the connection of the open end of the net 12 to the bank 40.

20 The open end 15 of the net 12 is, in this embodiment, connected directly to the spike 135. For this purpose, the upper end, in use, of the spike 135 is fitted with an adjustable locking member 141 which engages the handle 117 of the terminal hoop 16 of the net 12. The locking member 25 141 is of known type and is not shown in detail but, in general, allows the spike 135 to pivot relative to the handle 117 and to be locked in a desired position.

The spike 135, like the elongate rigid member is formed in two telescopically-engaged parts 142 and 143 which can be fixed at a selected length by a turn screw 144.

5 The elongate rigid member 122 is, in this embodiment, connected to the spike 135 close to the lower pointed tip 136 thereof but sufficiently far from the tip for this to be inserted firmly in the bank 40. The connection between the spike 135 and the elongate member 122 is shown in  
10 greater detail in Figure 6 and is effected by means of a screw-threaded bolt 146 which passes through cooperating, diametral apertures in the spike 135 and elongate member 122. The head 147 of the bolt abuts the outer surface of the spike 135 while the opposite end projects from the  
15 elongate member 122 and receives a wing nut 148. Plastic washers not shown are interposed between the facing surfaces of the bolt, spike, elongate member and wing nut.

It will be appreciated that, when the wing nut is  
20 slackened, the spike 135 and elongate member 122 may be pivoted relative to each other to vary their mutual inclination. The wing nut may be tightened to clamp the two members together at the selected inclination.

CLAIMS

1. Apparatus for handling a keep net of the type comprising a generally tubular net body closed at one end and open at the other and supported in shape by a plurality of spaced hoops, comprising an elongate rigid support member, attachment means at one end of the said support member for attachment thereof to the said one end of the tubular net body, and fixing means at the other end of the said support member for fixing it in position on the ground.  
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2. Apparatus as claimed in Claim 1, in which the said elongate rigid support member is telescopically collapsible for storage and transport thereof.  
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3. Apparatus as claimed in Claim 1, in which the said elongate rigid support member is composed of a plurality of separable elements to permit collapsing of the support member for transport and storage thereof.  
20
4. Apparatus as claimed in Claim 1, in which the said elongate rigid member is composed of a plurality of hingedly interconnected elementary limbs which are displaceable between an erected and a collapsed or folded position, means being provided to hold the adjacent elementary limbs in substantially aligned orientation when  
25

the elongate rigid member is erected.

5. Apparatus as claimed in any preceding Claim, in which  
the said attachment means at the said one end of the  
5 elongate rigid member includes a flexible line having a  
length at least as great as the radius of the support  
hoops of the tubular net body.

6. Apparatus as claimed in Claim 5, in which the said  
10 attachment means at the said one end of the elongate rigid  
member includes a releasable hook at the free end of the  
said flexible line.

7. Apparatus as claimed in any preceding Claim, in which  
15 the said fixing means comprise a ground-penetrating stake  
or spike removably attachable to the said other end of the  
elongate rigid member.

8. Apparatus as claimed in Claim 7, in which the said  
20 ground-penetrating stake or spike has an associated  
knuckle joint in its connection to the elongate rigid  
member or the next adjacent component thereof, whereby to  
permit the elongate rigid member to lie at an angle  
generally parallel to the ground surface when attached to  
25 the ground-penetrating stake or spike inserted generally  
orthogonally of the ground surface.

9. Apparatus as claimed in Claim 8 in which the said knuckle joint interconnecting the said ground-penetrating stake or spike and the elongate rigid member or the next adjacent component thereof is a universal joint permitting 5 angular movement in two planes.

10. Apparatus as claimed in any one of Claims 7 to 9, in which the stake or spike is attachable at or adjacent its end opposite its ground-penetrating end both to that hoop 10 of the keep net at the open end thereof and to the rigid elongate member.

11. Apparatus as claimed in Claim 7, in which the stake or spike is attachable at its end opposite its ground- 15 penetrating end to that hoop of the keep net at the open end thereof and is attachable to the elongate rigid member at a point intermediate its ends but closer to the ground-penetrating end.

20 12. Apparatus as claimed in Claim 12, in which the attachment of the stake or spike to the elongate rigid member is such as to allow the mutual inclination of the two members to be varied.

25 13. A method of laying a keep net of the type comprising a generally tubular net body closed at one end and open at the other and supported in shape by a plurality of spaced

hoops, comprising the steps of attaching to the said one end of the tubular net body a keep net handling apparatus as claimed in any of Claims 1 to 12, advancing the said one end beyond the bank into a body of water whilst  
5 retaining the said other end secured to the bank, and fixing the said other end of the elongate rigid member to the bank.

14. A method as claimed in Claim 10, in which the fixing  
10 means comprises a ground-penetrating stake or spike and the step of fixing the said other end of the elongate rigid member to the ground comprises introducing the said stake or spike into the ground and connecting the elongate rigid member to the said ground-penetrating spike.

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15. A keep net of the type comprising a generally tubular net body closed at one end and open at the other and supported in shape by a plurality of spaced hoops, having apparatus for handling the net comprising an elongate  
20 rigid support member, attachment means at one end of the said support member for attachment thereof to the said one end of the tubular net body, and fixing means at the other end of the said support member for fixing it in position on the ground.

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16. Apparatus for handling a keep net substantially as hereinbefore described with reference to, and as shown in,

the accompanying drawings.

17. A method of laying a keep net, substantially as hereinbefore described, with reference to and as shown in,  
5 the accompanying drawings.

18. A keep net incorporating keep net handling apparatus, substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

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